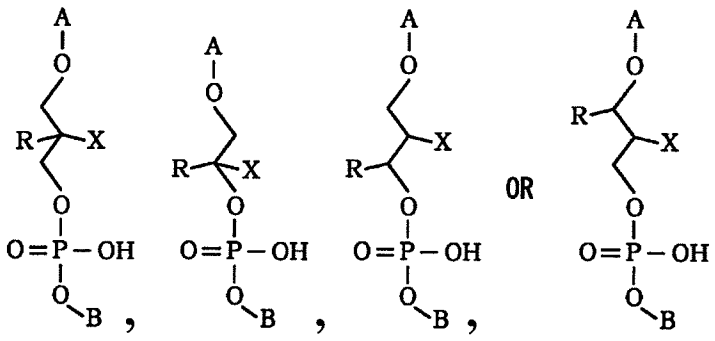
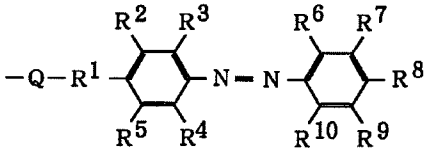
AMENDMENTS TO THE CLAIMS

1. (Cancelled)

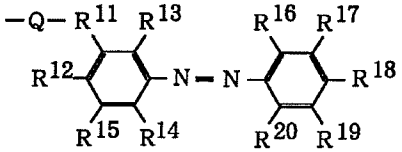
2. (**Currently Amended**) A DNA enzyme, represented by the following Formula:



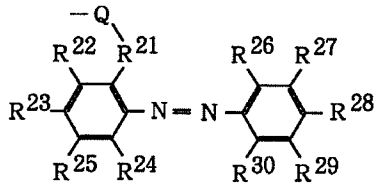
in the Formulae, A represents a catalytically active loop end, B represents an end of sequence of [[a]] nucleotide or [[an]] oligonucleotide which is complementary to substrate RNA, X represents the organic group selected from the group consisting of azobenzene, azobenzene derivatives, spiropyran, and stilbene, and R represents a hydrogen atom or an alkyl group having a carbon number of 1 to 4, wherein the azobenzene derivative is represented by the following Formulae (I), (II) or (III):



(I)



(II)



(III)

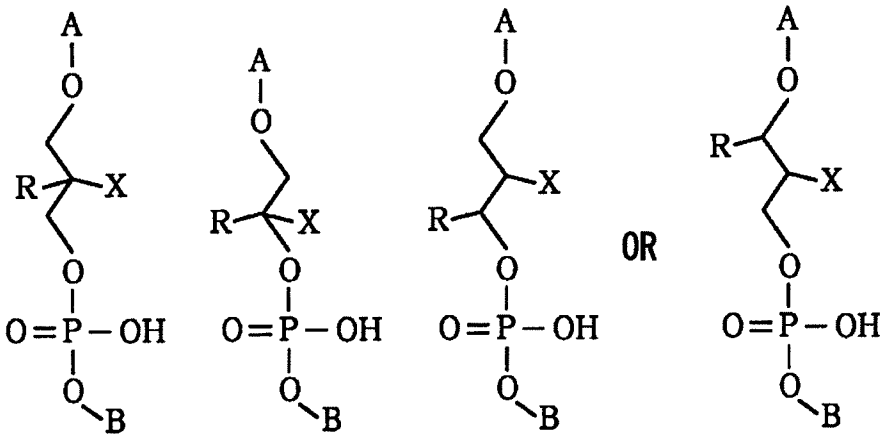
in the Formulae (I)-(III), R^1, R^{11}, and R^{21} independently represent (a) a direct bond, (b) an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkylene group having a carbon number of 1 to 20, or (c) an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkenylene group having a carbon number of 2 to 20; Q represents (a) a direct bond, (b) an oxygen atom, (c) a $-(CH_2)_n$-NH-CO- group, or (d) a $-(CH_2)_n$-CO-NH- group, wherein n = 1 to 5; and R^2 to R^{10}, R^{12} to R^{20}, and R^{22} to R^{30} independently represent (a) an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkyl group or alkoxy group having a carbon number of 1 to 20, (b) an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkenyl group or alkynyl group having a carbon number of 2 to 20, (c) a hydroxyl group, (d) a halogen atom, (e) an amino group, (f) a nitro group, or (g) a carboxyl group; and at least one of R^2 to R^{10}, at least one of R^{12} to R^{20}, and at least one of R^{22} to R^{30} is substituted.

3. (Cancelled)

4. (Withdrawn) A method for controlling the activity of a DNA enzyme, characterized by comprising the step of applying light at specific wavelengths to the DNA enzyme including a nucleotide residue, to which any one organic group selected from the group consisting of azobenzene, spiropyran, stilbene, and derivatives thereof is bonded, and thereby, effecting reversible structural isomerization between a planar structure and a nonplanar structure of the organic group, so as to control the RNA cleavage activity of the DNA enzyme.

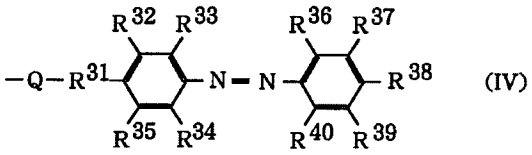
5. (Withdrawn) The method for controlling the activity of a DNA enzyme according to Claim 4, wherein the introduction position of the nucleotide residue is a 3'-side end of a catalytically active loop.

6. (Withdrawn) The method for controlling the activity of a DNA enzyme according to Claim 5, wherein the DNA enzyme is represented by the following Formula:

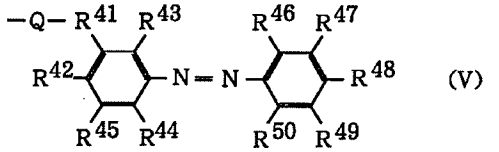


(in Formulae, A represents a catalytically active loop end, B represents nucleotide or oligonucleotide, X represents any one organic group selected from the group consisting of azobenzene, spiropyran, stilbene, and derivatives thereof, and R represents a hydrogen atom or an alkyl group having the carbon number of 1 to 4).

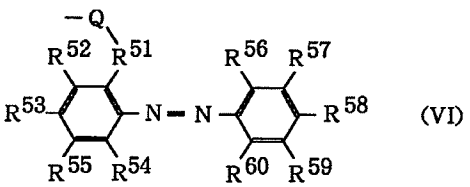
7. (Withdrawn) The method for controlling the activity of a DNA enzyme according to Claim 6, wherein X is represented by the following Formula (IV), (V), or (VI):



(IV)



(V)



(VI)

(in Formulae, R^{31}, R^{41}, and R^{51} represent independently a direct bond; an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkylene group having the carbon number of 1 to 20; or an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkenylene group having the carbon number of 2 to 20, Q represents a direct bond, an oxygen atom, a $-(CH_2)_n$-NH-CO- group, or a $-(CH_2)_n$-CO-NH- group, where n = 1 to 5, R^{32} to R^{37}, R^{39}, R^{40}, R^{42} to R^{47}, R^{49}, R^{50}, R^{52} to R^{57}, R^{59}, and R^{60} represent independently an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkyl group or alkoxy group having the carbon number of 1 to 20; an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkenyl group or alkynyl group having the carbon number of 2 to 20; a hydroxyl group; a halogen atom; an amino group; a nitro group; or a carboxyl group, and R^{38}, R^{48}, and R^{58} represent independently an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkyl group or alkoxy group having the carbon number of 1 to 20; an unsubstituted or a halogen atom-, hydroxyl-, amino-, nitro-, or carboxyl-substituted alkenyl group or alkynyl group having the carbon number of 2 to 20; a hydroxyl group; or a halogen atom).

8. (Previously Presented) The DNA enzyme according to Claim 2, wherein Q is a $-(CH_2)_n$-NH-CO- group and R^1, R^{11}, and R^{21} are all direct bonds.

9. (Previously Presented) The DNA enzyme according to Claim 2, wherein Q is a $-(CH_2)_n$-NH-CO- group, R^8, R^{18}, and R^{28} are all amino groups, and R^1, R^{11}, and R^{21} are all direct bonds.